

GEMÜ R563

Motorized control valve



Features

- Control of liquid and gaseous media from 63 l/h to 3300 l/h
- Linear or equal-percentage control characteristic options
- Hermetic separation between medium and actuator
- Actuating speed max. 3 mm/s
- Parameterizable via IO-Link
- On-site or remote end position programming via programming input
- Various functions integrated (e.g. feedback, stroke limiter, etc.)

Description

The GEMÜ R563 2/2-way straight seat control valve has a body with an integrated control mechanism. The GEMÜ R563 valve was specially developed for controlling small quantities and allows flow rates from 63 l/h to 3300 l/h. The valve will be available with a positioner for a 0/4-20 mA or 0-10 V input signal and can also be configured to a fail-safe position by using an emergency power supply module. Additional functions can be adapted via the IO-Link interface. The self-locking actuator holds its position in a stable manner when idle and in the event of power supply failure.

Technical specifications

- Media temperature: 0 to 80 °C
- Ambient temperature: 0 to 60 °C
- Operating pressure : 0 to 6 bar
- Nominal sizes: DN 10 to 15
- Body configurations: 2/2-way body
- Connection types: Threaded connection | Union end
- Connection standards: DIN | EN | ISO
- Body materials: PVC-U | PVDF
- Seat seal materials: PEEK
- Supply voltage: 24 V DC
- Actuating speed: max. 3 mm/s
- Protection class: IP 65

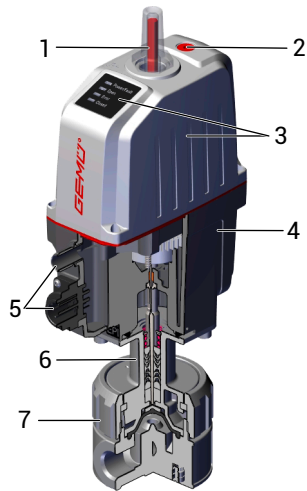
Technical data depends on the respective configuration

further information
webcode: GW-R563



Product description

Construction



Item	Name	Materials
1	Optical position indicator	PA 12
2	Manual override	
3	Actuator top with LED display	Polyamide, 50% glass fibre
4	Actuator base	Polyamide, 50% glass fibre
5	Electrical connections	
6	Distance piece with leak detection hole	
7	Valve body	PVC-U, grey / regulating cone PEEK PVDF / regulating cone PEEK

GEMÜ CONEXO

The interaction of valve components that are equipped with RFID chips and an associated IT infrastructure actively increase process reliability.



Thanks to serialization, every valve and every relevant valve component such as the body, actuator or diaphragm, and even automation components, can be clearly traced and read using the CONEXO pen RFID reader. The CONEXO app, which can be installed on mobile devices, not only facilitates and improves the "installation qualification" process, but also makes the maintenance process much more transparent and easier to document. The app actively guides the maintenance technician through the maintenance schedule and directly provides him with all the information assigned to the valve, such as test reports, testing documentation and maintenance histories. The CONEXO portal acts as a central element, helping to collect, manage and process all data.

For further information on GEMÜ CONEXO please visit:

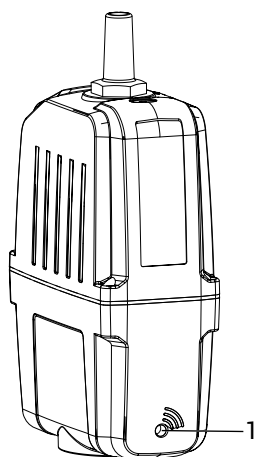
www.gemu-group.com/conexo

Ordering

GEMÜ Conexo must be ordered separately with the ordering option "CONEXO" (see order data).

In the corresponding design with CONEXO, this product has an RFID chip (1) for electronic identification purposes. The position of the RFID chip can be seen below. The CONEXO pen helps read out information stored in the RFID chips. The CONEXO app or CONEXO portal is required to view this information.

For electronic identification purposes, each replaceable component contained in the product is equipped with an RFID chip (1). Where you can find the RFID chip differs from product to product.



Actuator RFID chip

The CONEXO pen helps read out information stored in these RFID chips. The CONEXO app or CONEXO portal is required to view this information.

Availability

Availability of valve bodies

Threaded connection

DN	Connection types code ¹⁾		
	1		7
	Material code ²⁾		
	1	20	1
3	X	X	X
6	X	X	X
10	X	X	X
15	X	X	X

X = Standard

1) **Connection type**

Code 1: Threaded socket DIN ISO 228

Code 7: Union end with insert (socket) - DIN

2) **Valve body material**

Code 1: PVC-U, grey / regulating cone PEEK

Code 20: PVDF / regulating cone PEEK

Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Control valve, motorized, eSyStep	R563

2 DN	Code
DN 3	3
DN 6	6
DN 10	10
DN 15	15

3 Body configuration	Code
2/2-way body	D

4 Connection type	Code
Threaded socket DIN ISO 228	1
Union end with insert (socket) - DIN	7

5 Valve body material	Code
PVC-U, grey / regulating cone PEEK	1
PVDF / regulating cone PEEK	20

6 Seal material	Code
FPM	4
EPDM	14

7 Voltage/frequency	Code
24 V DC	C1

8 Control module	Code
Positioner	S0

8 Continuation of Control module	Code
Positioner, configured for emergency power supply module (NC)	S5
Positioner, configured for emergency power supply module (NO)	S6

9 Control characteristic	Code
Regulating cone, equal-percentage	A
Regulating cone, equal-percentage	B
Regulating cone, equal-percentage	C
Regulating cone, linear	D
Regulating cone, linear	E

10 Kv value	Code
63 l/h	63
160 l/h	160
1000 l/h	1000
1600 l/h	1600
2500 l/h	2500
3300 l/h	3300

11 Actuator version	Code
Actuator size 0	0A

12 CONEXO	Code
without	
Integrated RFID chip for electronic identification and traceability	C

Order example

1 Type		
2 DN	10	DN 10
3 Body configuration	D	2/2-way body
4 Connection type	1	Threaded socket DIN ISO 228
5 Valve body material	1	PVC-U, grey / regulating cone PEEK
6 Seal material	14	EPDM
7 Voltage/frequency	C1	24 V DC
8 Control module	S0	Positioner
9 Control characteristic	B	Regulating cone, equal-percentage
10 Kv value	63	63 l/h
11 Actuator version	0A	Actuator size 0
12 CONEXO	C	Integrated RFID chip for electronic identification and traceability

Technical data

Medium

Working medium: Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and seal material.

Temperature

Media temperature: 0 to 80 °C

Ambient temperature: 0 to 60 °C (code S0, S5, S6)*
* depending on version and/or operating parameters (see chapter Duty cycle and service life)

Storage temperature: 0 to 40 °C

Pressure

Operating pressure: 0 to 6 bar
All pressures are gauge pressures.

Pressure/temperature correlation:

Valve body material		Temperature in °C (valve body)											
Materials	Code	-10	±0	5	10	20	25	30	40	50	60	70	80
PVC-U	1	-	-	-	6.0	6.0	6.0	4.8	3.6	2.1	0.9	-	-
PVDF	20	6.0	6.0	6.0	6.0	6.0	6.0	5.4	4.8	4.3	3.8	3.2	2.8

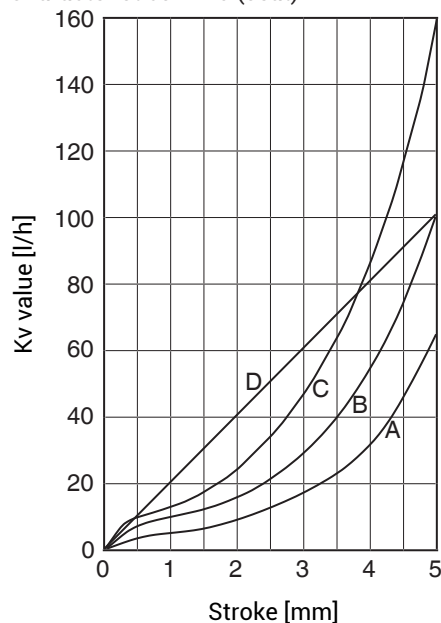
Permissible operating pressure in bar
The pressure rating (PN) depends on the connection code.
Data for extended temperature ranges on request. Please note that the ambient temperature and media temperature generate a combined temperature at the valve body which must not exceed the above values.

Leakage rate:

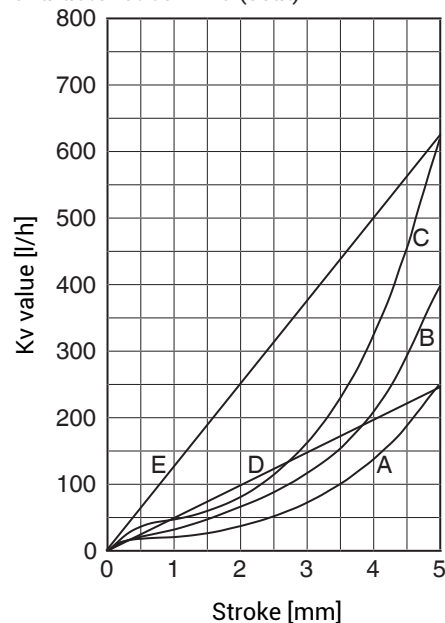
Seat seal	Standard	Test procedure	Leakage rate	Test medium
PEEK, PVC, PVDF	DIN EN 60534-4	1	IV	Air

Kv values:

Characteristics DN 3 (seat)



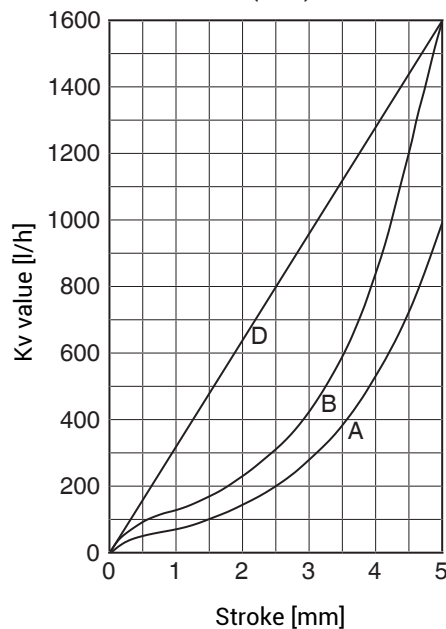
Characteristics DN 6 (seat)



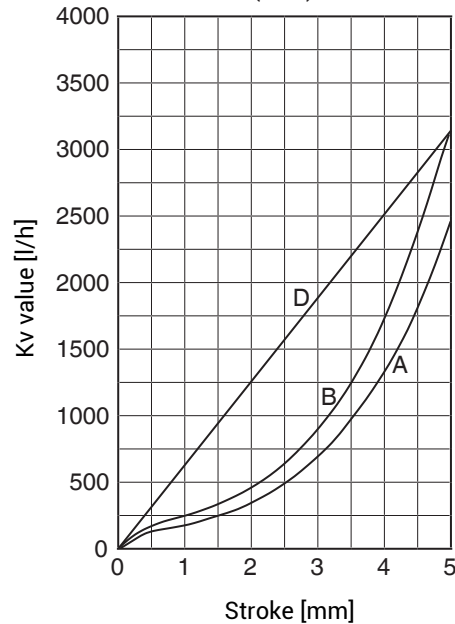
Characteristic	Kv values DN 3	Kv values DN 6
A	63	250
B	100	400
C	160	630
D	100	250
E	-	630

Kv values in l/h

Characteristics DN 10 (seat)



Characteristics DN 15 (seat)



Characteristic	Kv values DN 10	Kv values DN 15
A	1000	2500
B	1600	3300
D	1600	3300

Kv values in l/h

Product conformities

- Machinery Directive:** 2006/42/EU
- EMC Directive:** 2014/30/EU
- Interference resistance:** DIN EN 61000-6-2
DIN EN 61326-1 (industrial processes)
- Interference emission:** DIN EN 61000-6-4 (Sep. 2011)
Interference emission class: Class A
Interference emission group: Group 1

Mechanical data

- Protection class:** IP 65 acc. to EN 60529
- Actuating speed:** Max. 3 mm/s
- Stroke:** 5 mm
- Weight:** **Actuator**
DN 3, 6, 10 15 1.6 kg

Valve body

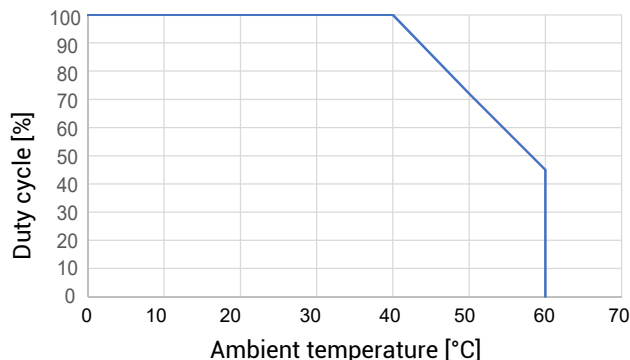
Connection types code	Material code	Weight
1	1	0.1
1	20	0.13
7	1	0.13

Weights in kg

Duty cycle and service life

Service life: **Control operation** - Class C according to EN 15714-2 (1,800,000 starts and 1200 starts per hour).
Open/Close duty - At least 500,000 switching cycles at room temperature and permissible duty cycle.

Duty cycle: Control module Positioner (code S0, S5, S6), Open/Close duty



The specified characteristics and values apply to the factory setting.

With reduced forces, higher duty cycles and/or higher ambient temperatures are possible. At higher force settings the duty cycle and/or ambient temperature is reduced (for IO-Link parameters see operating instructions).

Electrical data

Supply voltage Uv: 24 V DC ± 10%

Rating: Actuator size 0 (code 0A) 20 W

Operation: Stepper motor, self-locking

Reverse battery protection: Yes

The specified characteristics and values apply to the factory setting.

With reduced forces, higher duty cycles and/or higher ambient temperatures are possible. At higher force settings the duty cycle and/or ambient temperature is reduced (for IO-Link parameters see operating instructions).

Analogue input signals – Control module Positioner (code S0, S5, S6)

Set value

Input signal: 0/4 - 20 mA; 0 - 10 V (function selectable via IO-Link)

Input type: passive

Input resistance: 250 Ω

Accuracy/linearity: ≤ ±0.3% of full flow

Temperature drift: ≤ ±0.1% / 10°K

Resolution: 12 bit

Reverse battery protection: Yes (up to ± 24 V DC)

Digital input signals

Inputs: Function selectable via IO-Link (see table Overview of available functions – Input and output signals)

Input voltage: 24 V DC

Technical data

Logic level "1":	> 15.3 V DC
Logic level "0":	< 5.8 V DC
Input current:	typically < 0.5 mA

Analogue output signals – Control module Positioner (code S0, S5, S6)

Actual value

Output signal:	0/4 - 20 mA; 0 - 10 V (function selectable via IO-Link)
Output type:	active
Accuracy:	≤ ±1% of full flow
Temperature drift:	≤ ±0.1% / 10°K
Load resistor:	≤ 750 kΩ
Resolution:	12 bit
Short-circuit proof:	Yes

Digital output signals

Outputs:	Function selectable via IO-Link (see table Overview of available functions – Input and output signals)
Type of contact:	Push-Pull
Switching voltage:	Power supply U _v
Switching current:	≤ 140 mA
Short-circuit proof:	Yes

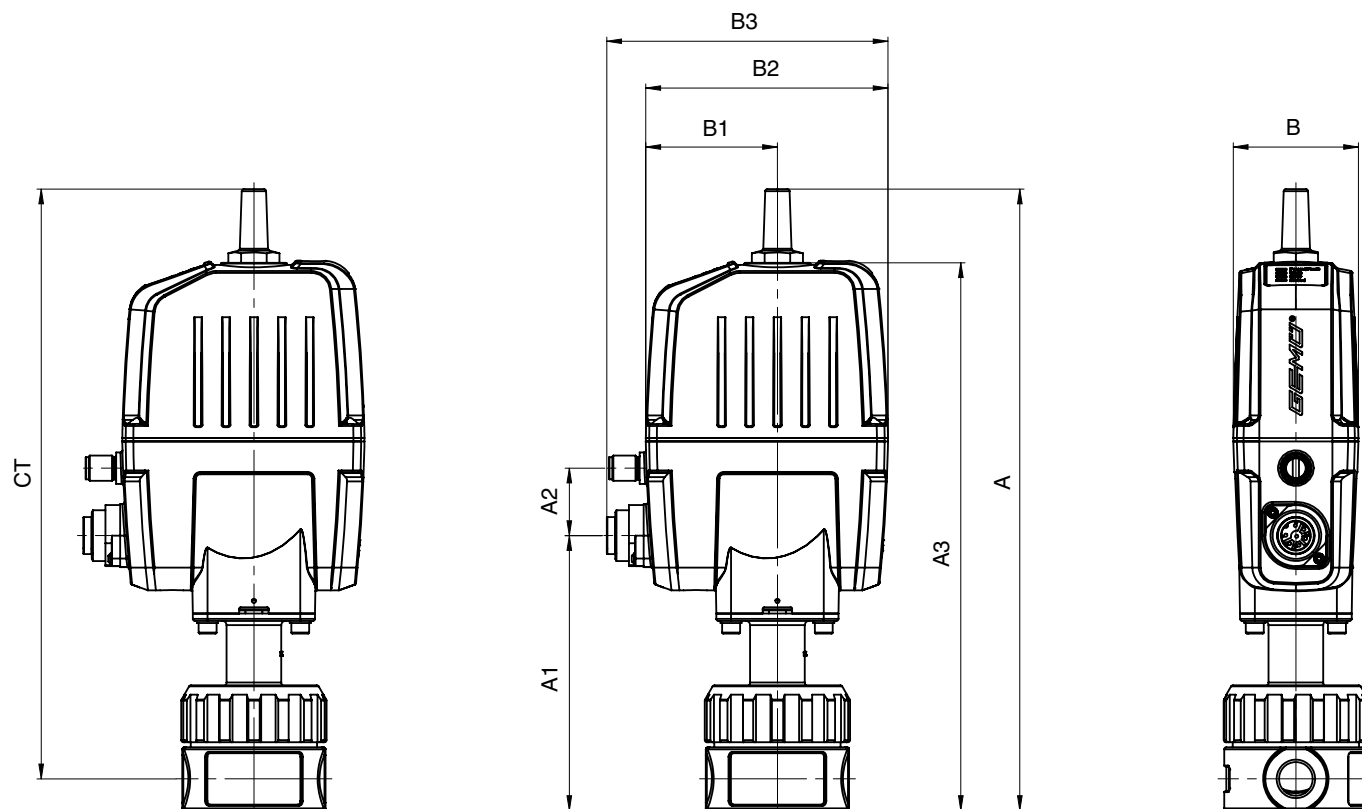
Communication

Interface:	IO-Link
Function:	Parameterization/process data
Transmission rate:	38400 baud
Frame type in Operate:	2.V (eSyStep positioner, code S0), PDout 3Byte; PDin 3 Byte; OnRequestData 2 Byte
Min. cycle time:	20 ms (eSyStep positioner, code S0)
Vendor-ID:	401
Device-ID:	1906801 (eSyStep positioner, code S0),
Product-ID:	eSyStep Positioner (code S0)
ISDU support:	Yes
SIO operation:	Yes
IO-Link specification:	V1.1

IODD files can be downloaded via <https://ioddfinder.io-link.com/> or www.gemu-group.com.

Dimensions

Installation and actuator dimensions

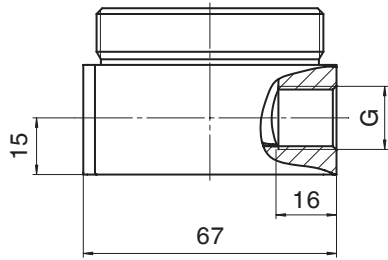


Actuator version	A	A1	A2	A3	B	B1	B2	B3	CT
0A	295	130.5	32	260	59.4	62.49	114.99	133.49	280

Dimensions in mm

Body dimensions

Threaded socket code 1

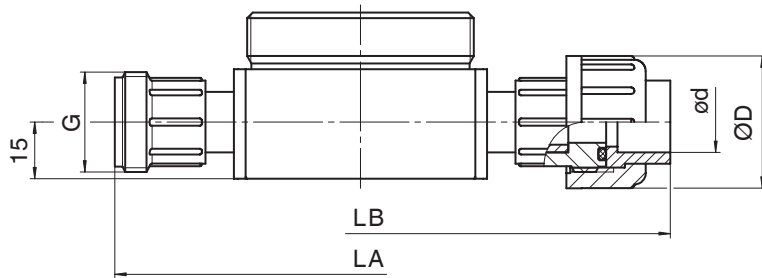


Connection type code 1 ¹⁾			
Material code 1, 20 ²⁾			
Nominal size	Code DN	Seat diameter	G
DN 10	3, 6, 10	3, 6, 10	G 3/8
DN 15	15	15	G 3/8

Dimensions in mm

- 1) **Connection type**
Code 1: Threaded socket DIN ISO 228
- 2) **Valve body material**
Code 1: PVC-U, grey / regulating cone PEEK
Code 20: PVDF / regulating cone PEEK

Union end code 7



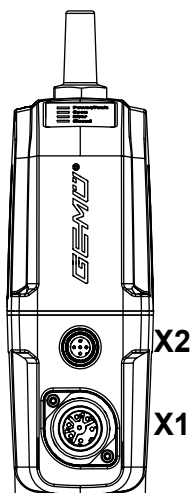
Connection type code 7 ¹⁾							
Material code 1 ²⁾							
Nominal size	Code DN	Seat diameter	G	øD	ød	LA	LB
DN 10	3, 6, 10	3, 6, 10	G 3/4	35	16	130	164
DN 15	15	15	G 1	43	20	130	168

Dimensions in mm

- 1) **Connection type**
Code 1: Threaded socket DIN ISO 228
- 2) **Valve body material**
Code 1: PVC-U, grey / regulating cone PEEK

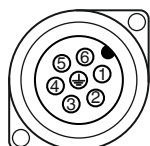
Electrical connection

Position of the connectors



Electrical connection

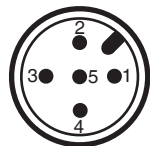
Connection X1



7-pin plug, Binder, type 693

Pin	Signal name
1	Uv, 24 V DC supply voltage
2	GND
3	Digital input 1
4	Digital input 2
5	Digital input/output
6	Digital output, IO-Link
7	n. c.

Connection X2 (only for control module code S0)



5-pin M12 plug, A-coded

Pin	Signal name
1	I+/U+, set value input
2	I-/U-, set value input
3	I+/U+, actual value output
4	I-/U-, actual value output
5	n. c.

Overview of available functions – Input and output signals

	Function	Default settings		
		Control module S0	Control module S5	Control module S6
Digital input 1	Off Open Close Safe/On Initialization	Initialization	Initialization	Initialization
Digital input 2	Off Open Close Safe/On Initialization	Off	Safe/On	Safe/On
Digital input/output	Open Close Error Error+warning Initialization	Error	Error	Error
Digital output	Open Close Error Error+warning	Close	Close	Close
Analogue input	4 – 20 mA 0 – 20 mA 0 – 10 V	4 – 20 mA	4 – 20 mA	4 – 20 mA
Analogue output	4 – 20 mA 0 – 20 mA 0 – 10 V	4 – 20 mA	4 – 20 mA	4 – 20 mA

Accessories

GEMÜ 1218



The GEMÜ 1218 is a connector (cable socket / cable plug), 7-pin. Straight and/or 90° angled plug type.

Ordering information

GEMÜ 1218 Binder connector			
Connection X1 – supply voltage, relay outputs			
Binder plug	Mating connector 468/ eSy series	Terminal compartment/ screws, 7-pin	88220649
		Terminal compartment/ screws, 7-pin, 90°	88377714 ¹⁾

1) provided in the scope of delivery



GEMÜ 1219

Cable socket / cable plug M12

The GEMÜ 1219 is a connector (cable socket / cable plug) M12, 5-pin. Straight and/or 90° angled plug type. Defined cable length or with threaded connection without cable. Various materials available for the fixing nut.

Ordering information

Suitable for electrical connection of the connector X2

Description	Length	Order number
5-pin, angle	without cable	88205545 ¹⁾
	2 m cable	88205534
	5 m cable	88205540
	10 m cable	88210911
	15 m cable	88244667
5-pin, straight	without cable	88205544
	2 m cable	88205542
	5 m cable	88205543
	10 m cable	88270972
	15 m cable	88346791

1) provided in the scope of delivery for control module code S0



GEMÜ 1571

Emergency power supply module

The capacitive emergency power module GEMÜ 1571 is suitable for valves with motorized actuators such as GEMÜ eSyStep and eSyDrive. In the event of a power failure, the product provides an uninterrupted power supply so that the valve can be moved to the safety position. The emergency power module has a capacity of 1700Ws. The input and output voltage is 24 V.

Ordering information

GEMÜ 1571 emergency power supply module			
Input voltage	Output voltage	Capacitance	Item number
24 V	24 V	1700 Ws	88660398



GEMÜ 1573

Switching power supply unit

The switching power supply unit GEMÜ 1573 converts unstabilized input voltages of 100 to 240 V AC into a constant output voltage of 24 V DC. The product can be used as an accessory for valves with motorized actuators such as GEMÜ eSyStep und eSyDrive. Different powers and output currents are available.

Ordering information

GEMÜ 1573 switching power supply unit			
Input voltage	Output voltage	Output current	Item number
100 - 240 V AC	24 V DC	5 A	88660400
		10 A	88660401



GEMÜ SERVICE-IO-LINK-KIT

Programming set

The GEMÜ service IO-Link set comprises an IO-Link master, an adapter and a cable gland. The programming set is suitable for all GEMÜ IO-Link interfaces.

Ordering information

Order number: 99072365



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